

Interfaces

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British
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Johansson & Faulkner on piracy

Norman talks to Dixon
Dix mixes it with marketing

Kakoulli's student perspective

**Kilgour telling
tales from
hyperspace**

plus...

debating HCI education
linking China and Scotland
accrediting usability



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Views from the Chair

This is my last editorial as chair of the British HCI Group. Gilbert Cockton has kindly agreed to be nominated as chair in my place on the slate for the AGM in Lille in September. He takes over at an exciting time with two major new initiatives in the pipeline. Dave Clarke, Nico MacDonald and Eamonn O'Neill have designed and implemented a web-based news service www.UsabilityNews.com. They are in the process of hiring a paid editor to co-ordinate the content of this service that we hope will both be useful to our members and more generally will raise the profile of usability as an area of expertise.

The other initiative, equally ambitious for a voluntary committee, is to design a light-weight accreditation scheme to fit the needs of our members (see article on page 10). Here we are very much at the consultation stage and I would urge anyone with an interest in this issue to return the questionnaire with any comments that can help us get this right.

I have enjoyed being your chair for the past four years. I guess nothing very startling has happened during my tenure. I do think, however, that there is more and more a feeling of community amongst HCI folk. The British HCI Group has made a considerable contribution to this gradual change through its conference, email list, web site, meetings and of course this magazine. I hope you will continue to support the new executive committee in this endeavour in the years to come.

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Editorial

A certain grizzled Glaswegian announced at the ScotlandIS Usability Forum that 'Usability was a dried up backwater of HCI'. On the one hand this supports my view that usability is mature enough to be suitable for technology transfer programmes (such as TCS). On the other hand, has everyone really drunk the usability stream dry? Any four-year-old teaches you that usability expands like the universe. Human abilities and expectations evolve – yet another challenge for 'Design Darwinism'!

Our new commissioning editor Alex Dixon scores a scoop in his first contribution, with an exclusive conversation with the Don himself at



Editorial ... continued

the Usability conference at InternetWorld. Alex also reviews the conference. Alan Dix chips in here with a timely analysis of the key role of marketing in the usability of products, and the trust that must be maintained between the vendor and the user.

Long-time contributing editor Xristine Faulkner, as well as yet another book review (how does she read so much?!), helps launch 'Learning and Doing', our focus on student work. In the last issue I announced a section called 'Group Projects' and promised to bring back 'My PhD'. Reality is never quite as tidy! However, we do have three contributions from learners at different levels. Sofie Johansson and Xristine (her honours project supervisor) tell a compelling tale of contemporary human motivation and ethics. Andreas Kakoulli shares his first impression, as an undergraduate computing student, of HCI. Lastly, one of the first groups of students on our MSc Interactive Technologies for e-Commerce, describe an actual 'Interactivity without Frontiers' solution – the Sino-Scot link.

This is only one of several pieces that should broaden our minds in advance of the Lille conference, September 10th–14th (see <http://www.ihm-hci2001.org/> – or, indeed, find your way there from <http://www.usabilitynews.com/>). With a fair wind, one of the most important contributions from Lille may be a definition of a 'Usability Professional', and, by inference, the role of HCI educators. The middle pages of this issue contain a questionnaire that we need YOU to complete and return, to influence the definition of a Usability specialist's competency. Jonathan Earthy and Andrew Monk's exhaustive and exhausting work have defined the proposed criteria for

accreditation. This will also be the subject of an 'HCI in Practice' session at Lille. On the following day will be the panel session that Chris Rourke describes in this issue. At a time when educators are increasingly required to design programmes that dovetail onto checklists and levels of competency defined by industry, professional or standards bodies, in the interplay between these two sessions, and related activities at the conference, lies the future for many of us. Linking nicely is Sandra Cairncross's book review on cyber-ethics – in particular she notes the emphasis by the BCS on increasing the ethical knowledge of computing professionals.

Our long-time pillars of wisdom, a somewhat rowdy Cassandra Hall, and the *vieux* storyteller himself, Alistair Kilgour, complete this issue, each with their own entertaining ability to think about the past and the future while pointing out the failings of the present. From each we get a sense of how usability really is perceived outside this community and there is clearly much yet to be done.

Lastly, as the Monk age gives way to the Cockton era, I would like to salute our retiring Chairman. Andrew Monk's tenure pre-dates considerably my involvement in the British HCI Group, but he has helped me considerably in this publication – with content, advice and support. His chairmanship of the BHCIG executive meetings (and management of the Group) have been an inspiration, and he has laid well the path for Gilbert's world domination.

Tom McEwan
Editor

RIGHT TO REPLY

Make *Interfaces* interactive! We invite you to have your say in response to issues raised in *Interfaces* or to comment on any aspect of HCI that interests you. Submissions should be short and concise (500 words or less) and, where appropriate, should clearly indicate the article being responded to. Please send all contributions to the Editor.

NEXT ISSUE

Interfaces welcomes submissions on any HCI-related topic, including articles, opinion pieces, book reviews and conference reports. The next deadline is **15 October**, but don't wait till then – we look forward to hearing from you.

To receive your own copy of *Interfaces*, join the British HCI Group by filling in the form on page 23 and sending it to the address given.

with thanks to commissioning eds:
Vet's Guide: Alistair Kilgour, alistair@realaxis.co.uk
Learning and Doing: Alex Dixon, alex.dixon@virgin.net
Book Reviews: Xristine Faulkner, Xristine@sbu.ac.uk

Deadline for issue 49 is **15 October 2001**. Deadline for issue 50 is **15 January 2002**. Electronic versions are preferred: RTF, plain text or MS Word, via electronic mail or FTP (mail fiona@hiraeth.com for FTP address) or on Mac, PC disks; but copy will be accepted on paper or fax.

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Usability: essential hints and tips from the customer

6th June 2001
London, UK

This one-day conference took place at this year's London-based Internet World

exhibition. Senior business managers found out how usability specialists can contribute to business success. Usability specialists had an opportunity to reflect on how best to provide their contribution to business success.

Our chair was Harold Hambrose, President and CEO of Electronic Ink, whose training was as a product and user experience designer. He therefore shares the interests of both business people and usability specialists. In his opening speech he posed such questions as, 'Could usability have saved us from the dotcom bust?', 'Can usability affect the development of information appliances?', and declared that usability is as much about business strategy and success as it is about user experience.

Don Norman was the keynote speaker, addressing the topic: *If the customers matter, then the customer experience is critical.*

Norman gave us some examples that illustrate how poor web design can be. He quoted from a recent New York Times article an account of an attempt to purchase a known item through Sony's website. The journalist could not find the required product, was 'shocked at how dreadful' the site was, and then used a phone to make the purchase.

Next Norman discussed a study by his company (The Nielsen Norman Group) in which journalists were asked to find basic contact details and other company information from corporate websites, a typical task for this group of users. Only 60% of the journalists were successful.

Good design requires that you ask questions like, 'Who are the users?' and 'Why do you have a website?'. Norman told us that the poor quality of many websites arises because these questions are neither asked nor answered.

Maybe Sony's intention was that their website should provide a good experience for visitors. But neither people who want to buy a product nor potential employees have a good experience. To find out if a site works, says Norman, get people who match the demographic of your target users and watch them doing the tasks they care about.

Note that Norman said to watch, not to ask. He warned against using focus groups because we learn the wrong things from them. There are two reasons. First, what people say they do is different to what they actually do. Second, influenced by the social context and command characteristics people tell us what they think we

want to hear. To understand what users really do you must watch them doing what they really do.

When you are designing you cannot talk to the users. In any case, users will probably do something different to what they say. Therefore Norman proposes Human-Centred Design as the most effective approach to successful design. This provides the cycle of observe, design, test, redesign. Create paper prototypes and watch people using them. Norman warned that, 'Any company that's proud of its user test lab is in trouble!'

Phil Barrett of Flow Interactive gave us comprehensive advice on *Planning and Performing Worthwhile Usability Tests*. His message was that usability testing doesn't work if you only test at the end of a project. By then there's no time, money, or energy left to address any problems that are discovered. Barrett confirmed that the most successful tests are quick, light and frequent.

During his survey of many alternative usability techniques Barrett declared that there can be some value in using focus groups, provided that this happens early in the design phase and is only used as one part of the whole design process.

Barrett gave us many tips on successful user testing, including eliciting running commentaries, and being sensitive to test subjects whose personal goal of retaining dignity is challenged during observed user tests.

Barrett also had a message for interface designers. 'Usability testing is your right!', he told them. He explained that programmers can test their work to see if they got it right by running their code. By contrast information architects and interface designers are expected to get their work right without testing. He urged them to demand usability tests to provide them with the feedback they need.

Barrett declared that a usability lab is not essential for conducting usability tests. He explained that a lab is of no benefit to users or usability testers – testing in an ordinary, quiet room is sufficient; a lab's purpose is to let management and the production team see what happens when people try to use their software products.

Barrett also spoke about the value of outsourcing usability testing, and he gave us a comprehensive introduction to international usability testing. He explained that the cultural differences between nations mean it is essential to use local usability specialists in each country, and to give them autonomy to prepare and conduct their own tests. It became clear that



side of the screen

Alex Dixon

international usability testing is a complex, but necessary process.

The first of a number of panel discussions addressed the topic, *Usability for the International Site*. The panel comprised Nic Newman (BBC News Online), Toby Lovern (GlaxoSmithKline), Peter Van Dijck (Vardus) and David Gerken (Ask Jeeves). We learned that best web design practice in one nation is not the same as the best practice in another, so, for example, audiences in Italy and the UK would require different designs. Each culture has its own preferences for things like hot spots, colours, and the location of search boxes. To illustrate how cultural preferences create a demand for different styles of content we were told that the BBC's African pages show more news, whereas their UK and US pages show more features.

The *Mobile Usability* panel comprised Richard Jelbert (Argogroup), James Pearce (Encerca), Scott Weiss (Usable Products Co) and Toby Lovern. Cost, tiny bandwidth and breaking connections were identified as key usability problems of mobile devices, though 3G will provide better bandwidth and improved connections. There are no universal usability guidelines for mobile devices, though initiatives like Scott Weiss's wirelessroundtable.org promote the development of mobile user interface guidelines. The 'walled garden' approach makes WAP sites hard to get to and difficult to bookmark. The outdoor context of use of mobile devices makes it more difficult to complete satisfactory tests; lab tests are valid, but users will encounter more severe problems when using devices for real in the street.

Dominic Cameron (lastminute.com) and Ian Germer (Vodafone Multimedia) made up the final panel on *Finding Your Voice*. Voice interfaces are set to become more important as we move to a single network. Using voice you can create a very engaging user experience. Voice recognition is most successful for narrowly defined tasks. A user's context determines whether a voice interface is appropriate, so alternative modes must be available. Error handling is much more difficult with voice interfaces than with web interfaces, and this is a fresh challenge for usability specialists.

During the day we learned that future success will depend on equal emphasis being given to technology, usability and business issues. This one-day conference successfully promoted the value of usability to business and highlighted what usability specialists must learn from their business-oriented colleagues.

Later in the day I questioned Don Norman. I asked what were the three most important messages or issues for the usability community? Norman responded:

- (i) Stop being bigots
- (ii) Usability is always secondary
- (iii) Ask what value is being delivered to the user and to the company.

Norman pointed out that marketing specialists provide quantitative analysis to support their case; by contrast usability specialists do a bad job of demonstrating the value they contribute. He wants to see usability and marketing people working as allies. But he recognises that usability specialists are closer to the university research community. Since universities don't have experience of delivering real products they have less expertise in managing costs and customer services. This influence has affected usability specialists who work in industry. So Norman's plea is that usability specialists learn the language of business. Ultimately you need to be an executive to have an impact on usability.

Norman continued. The perspectives of marketing and usability are both intelligent and are both correct. However, these two perspectives address different dimensions of a multidimensional design problem and so there can be contradictions. During his talk he told us that, 'Highly usable products are very dull,' and 'Highly sexy products are unusable.' You must choose a solution by determining what's best for the business. It is the Project Manager's duty to find the right balance and propose this to Finance who controls the budget. A single answer is never optimal.

'I never go to the store looking for "a usable product"' says Norman. People in a store are looking for something that will make their life better. A product must have the right functions and be enjoyable; as a secondary quality a product must be understandable, though this might not be apparent at the time of purchase. His 98-year-old father had recently bought a scanner, complete with its 150-page manual. The product marketing was great, but the product should be designed so it doesn't need a manual, or at least, not a long one.

I asked whether the design of a product can ever eradicate the need for a manual? No! Complex things are complex! We are always faced with new jobs, new tasks, and new devices. Learnability comes from understandability. Today we design unnecessarily complex products, and the poor manual writer struggles to make it sound sensible. The better way to design is to start by writing the simplest possible manual for the task, and then making sure the product itself fits the manual.

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Piracy, profits and people

Sofie Johansson and Xristine Faulkner

There is a wealth of electronic material available that can be copied easily and without additional equipment. Chesterman and Lipman describe software in a way reminiscent of Anglo Saxon riddles: '*... something which can be stolen without depriving the owner of it, a commodity which can be extremely valuable, and yet falls outside the normal political and social definitions*' (Chesterman and Lipman, 1988). Software piracy has a huge impact on software houses and some are willing to pay handsomely to catch the perpetrators (Knight, 2000; McAuliffe, 2000).

Software needs international laws; different laws in different countries do not assist an international manufacturer. To be fair, software piracy does not have a very long history, probably because software has had little time to develop one. However, it gathered its impetus in the UK at the end of the 1970s since prior to the Copyright Amendment Act of 1985 software houses depended on suing for breach of contract. The falling cost of PCs increased their numbers and the need for software, which remains relatively expensive, so people resort to piracy. Unfortunately, software is easy to copy; and the Web has made that easier.

Our small, pilot study of 127 respondents representing 5 culture groups examined the cross-cultural variation of attitudes to copyright. We believed that different cultural groups would hold different attitudes to software piracy.

A culture group is not defined here by nationality, but as a group of people holding similar beliefs. Although some of the samples are drawn from the same country they aren't *Swedish* or *English* cultures but separate cultural groups. The way people behave is influenced by their attitudes and people tend to judge what is normal by what people around them do and believe in (Atkinson, 1993). Or, as Terry Pratchett puts it: '*... humans derive their notions of what it means to be a normal human being by constant reference to the humans around them ...*'.

Software pirates say software houses make huge profits and 25% of our respondents 'agreed' or 'strongly agreed' that software manufacturers can 'afford' piracy. But software piracy has very serious implications not just for software houses but for related industries too. The global economy, government income from taxes and employment rates are all affected. According to Price Waterhouse Coopers the software industry provided 334,181 jobs in Western Europe in 1996. Reducing software piracy might lead to greater economic activity, increased employment and governmental revenue.

Five different subject groups were chosen for our study (see Table 1): a university and an architectural company in

Origin of Group	Letter Code
College, Malmö Sweden	A
Airforce Base, Sweden	B
University, Sweden	C
University, England	D
Architectural firm, England	E

Table 1: Overview of group codes

the UK, and from Sweden, a college in Malmö, a Swedish air force base; and a Swedish university. The anonymous questionnaire was produced in English and Swedish.

All respondents have computer access and all but one used the Internet. Nearly 5% have never heard of software piracy. However, the same respondents, A37, B4, B11, D29, D30, D31, are aware copyright applies to computer software and games; so this might be unfamiliarity with terminology. All respondents in groups A and C knew copyright applied to software. However, not everyone did; 10% of group D and 5% in B and E. Despite the high awareness of copyright few respondents would report piracy. Group D was least likely at 3%. Group E most likely, with 16%. For group A it was 5% and group B 10%.

Table 2 displays the minimum and maximum score obtained regarding attitudes to software copyright. The minimum obtainable score for this is 7, indicating a very positive attitude to copyright. The maximum is 35, indicating a very negative attitude to copyright.

Group	No.	Min	Max	Group Mean	St. Dev.
A	41	16	35	27.05	4.335897
B	20	9	26	22.50	3.593976
C	16	14	29	23.90	3.593976
D	31	15*	33	25.06	5.656854
E	19	11	25	20.16	3.700798
Total N	127	9	35	24.24	4.964503

* Min Value was actually 10, but this person did not answer all the questions, therefore this score was disregarded.

Table 2: Table of scores and means

Sofie led a focus group consisting of students and professionals. Two main points were discussed: Why do you think people use pirated software? If the people using this type of software had the money, do you still think they would buy it?

Describing their response to question 1, Sofie sang an old song by ABBA: '*Money, money, money...*' (well, she is Swedish). Clearly, money is the motivator here. The students in the group were unanimous they could not afford software. Surprisingly, the well-paid professionals agreed. Both also mentioned how easy copying was.

The majority of the respondents hold a negative to quite negative attitude to copyright, independent of culture group, but with a tendency towards higher negative attitudes amongst the students.

Leon Festinger's Cognitive Dissonance theory suggests people strive to achieve a cognitive consistency. When they act in contradiction to their beliefs, a dissonance is created. To reduce this they tend to alter their attitudes to accord with their behaviour. It is easy to understand how students justify their behaviour. They know copying software is wrong, but use their impecunious state to justify it. Software profits ease a guilty conscience and legitimise the illegal and immoral.

The law surrounded photocopying, copying of music and TV for personal use has changed in the face of unenforceable



laws. FAST might continue to make swoops and pirates will be caught but law is only effective when enforceable. Unfortunately, copying software doesn't seem wrong to people and prevention is difficult without reducing accessibility and usability. Software houses seem to have a stark choice: waste money tilting at windmills or reduce their prices so copying is not worth the effort. But judging from our albeit small pilot study, asking people to see that what they are doing is wrong may not be an option.

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Sofie Johansson and Kristine Faulkner

Book Review

Sandra Cairncross

Cyberethics: Morality and Law in Cyberspace
 Richard Spinello
 Jones and Bartlett Publishers 2000

The growth of the internet has brought with it a growth of social,

ethical and legal issues which both developers and users increasingly have to be aware of. *Cyberethics: Morality and Law in Cyberspace* focuses on four of these: free speech, intellectual property, privacy and security. Its primary purpose is to 'carefully review the social costs and moral problems that have been triggered by the expanded use of the [internet]'. In so doing it draws on the work of legal experts and philosophers.

The book is aimed at students and special features include case studies which apply theories to real-life situations, thereby bringing the subject alive, and exercises to help students review their grasp of the key concepts through reflection and (ideally) discussion with others. Recommended readings are also given. There is also a companion web-site (www.jbpub.com/cyberethics) which provides additional resources both for students and lecturers.

The book opens with an overview of the internet and ethical values. Traditional ethical frameworks from different philosophical traditions are described. Computing students who have never studied philosophy may find this challenging but the author gives examples of how the

The 16th British HCI Group
 Annual Conference

HCI 2002

South Bank University: London
 September 2nd to 6th 2002

Memorable Yet Invisible

As interactive technology becomes more and more pervasive, user interfaces have to become less intrusive. However, interfaces are also being used to project identity and so have to be both recognisable and memorable. Designing systems that are memorable yet invisible presents a new set of challenges to the HCI community.

The 16th annual conference will examine these issues.

Conference chair: Fintan Culwin fintan@sbu.ac.uk

Further details are available from

<http://www.bcs-hci.org.uk/hci2002/>

theories can be applied in real-life situations, for example the morality of an employer's decision to inspect employees' emails is explored from an utilitarian framework, and Kant's theory of pluralism is applied to spamming. This helps bring the theory alive and make it more relevant.

Having explored ethical frameworks the author then goes onto examine key areas: governing and regulating the internet, free speech and content control in cyberspace, intellectual property in cyberspace, regulating internet privacy, and securing the electronic frontier. Case studies are provided and questions are set which encourage students to explore issues for themselves. These could form the basis of classroom-based discussion in the form of seminars or even debates.

At a time when the British Computer Society is asking that professional issues be explicitly addressed in our programmes, this book has a useful role to play as a reference point for lecturers and students alike. The teaching of professional issues should not be left solely to modules on ethics or professional development. Ethical considerations and human implications of design issues can and should be woven into a range of modules especially those on system design and development. However this is unfamiliar territory for many of us; books such as this one can provide a useful starting point.

Sandra Cairncross
 Teaching Fellow & Senior Lecturer
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Vet's Diary

Telling Tales

One of my all time favourite papers, which I have referred back to and recommended to others countless times in the eight or so years since I first read it (in report form), is *The Homeopathic Fallacy in Learning from Hypertext*, by Jean McKendree, Will Reader and Nick Hammond (published in *Interactions*, 2:3, pp74–82). This is a comprehensive and incisive exposure of several unexamined and generally unfounded assumptions which lie behind the exaggerated claims made for hypertext, as a more effective way of presenting knowledge in support of online learning. Everyone who regularly uses the web has by now had extensive experience as a hypertext user, and will have appreciated for themselves both its strengths and its limitations as a knowledge repository and learning resource.

I was recently involved in restructuring and extending for use in distance-learning mode some course notes on multimedia designed by their originators (Lachlan Mackinnon, Christian Jones and others at Heriot-Watt) as handouts to accompany a conventionally delivered on-campus taught module. Apart from 'filling in the gaps' (i.e. capturing as text and pictures the added value provided verbally by the lecturers in live on-campus presentation), what I finished up spending most time and energy on was attempting (with rather limited success, it has to be said) to restructure the material into a linear, logical sequence. In effect I finished up writing (or at least editing) a book.

But wasn't this intended for web delivery? Yes indeed. When I realised what I had done, my first thought was, 'Oh McLuhan!'. This just confirms, I thought, that I am trapped in that old-fashioned, outmoded linear mode of thinking deriving from the Gutenberg galaxy, totally inappropriate in the new world of the web. But then I remembered the homeopathic fallacy paper, and didn't feel so bad. I have always felt that refusal by hypertext writers to impose a linear structure on their material

was a dereliction of authorial duty, laying on the reader a responsibility which rightly and ineluctably belongs to the writer, whether the work is fact or fiction. One major part of an author's work is, or should be, deciding where to put things – the other part being what things to put.

Complementary to the fallacies about the supposed advantages of hypertext is the belief that linear presentation imposes sequential access by the reader. Quite the reverse is of course the case, as the HF paper also reminds us. Like most people, I frequently read the last paragraph (or the conclusions section) of an article or paper first, and it is surprising how often the experience of reading a novel is enhanced and enriched by reading the first chapter again after getting to the end. An additional and significant advantage of the linear structure, whose importance cannot be exaggerated, is that readers always know what they are missing – that is, what they have not yet read.

Beyond that, there is something deeper here, connected with the power of narrative. Much has been written recently about the significance of narrative in HCI – for example, the work of Carroll and others on scenario-based design (reviewed by Iain McGregor in issue 47 of *Interfaces*). What are scenarios if not little stories of possible encounters between 'real' (though usually invented) users and 'real' (though often simulated, or incompletely functional) systems?

The ease with which readers or listeners are drawn in to a narrative, however bare the bones, and however often they are reminded it is 'just a story', relates to something fundamental in the human psyche. If you need convincing of this, have a look for example at Italo Calvino's *If on a Winter's Night a Traveller*. Here the author repeatedly suspends the narrative to start a new, nested one, and although you feel sure you are being hoodwinked (and you are), you fall for it every time. A few simple phrases, a few seductive words, and

Alistair Kilgour

your imagination is off again, creating, speculating and above all engaging with the characters and their unfolding tale, silencing completely the small rational voice telling you it's all an illusion – not to mention the voice of the narrator (also of course an illusory construct), constantly breaking in to comment of the action. Somehow this just adds to the enjoyment.

An even more impressive demonstration is the novel *Pfitz* by Andrew Crumey (a Scottish writer who deserves to be better known – formerly an astrophysicist at St Andrews University, now literary editor of *Scotland on Sunday*). This is a story about imagination, simulation and authenticity, concerning the creation by a wealthy and eccentric prince of a fully documented and self-consistent invented country, complete with writers, scientists, and libraries full of their works. It is also a love story and a detective story, peppered with interjections by the narrator commenting on the characters and the events, and on the nature of the enterprise they (and you) are engaged in. Unlike in the Calvino tale, the story stack is successfully and triumphantly popped, all narrative strands unwound, and the mystery solved – a real *tour de force*.

By the way (this should maybe be a hypertext link – an aside which can be skipped if you are anxious to get on with the story) I recently got confirmation that the power of the narrative is just as strong in film – maybe you never doubted it – even when the authors are there on screen arguing about the plot and the characters. The film *À l'Attaque* (quaintly translated as *March On!* in English), directed by Robert Guédiguian, is at the outer level about two friends working together and arguing about the screenplay for their next film. As they write we see their ideas, the scenes and characters they invent, brought to life in the 'film within the film'. To begin with, the characters and their situation seem rather uninteresting. But gradually you get drawn into their



story, and in the end are moved by their plight, and feel like cheering you the final happy ending, even though you know it is a fairy tale, and much less 'realistic' than the tragic alternative the writers first offer, and also themselves reject. It's witty and engaging and surprisingly affecting – and enhanced rather than diminished by the metastory, even though this acts as a constant reminder of the artificiality and arbitrariness of the fable you are none the less ineluctably drawn into.

So would we all learn more easily if all knowledge could be wrapped up in narrative form? I am not sure this is possible or even desirable, but I do think it is not accidental that linear structuring of knowledge remains the most effective, despite many years of hyper hysteria.

Finally I would like to return briefly to those 'little stories', i.e. scenarios, their place in system design, and in particular their relation to UML. I am currently a tutor on the Open University's M301 module, 'Software Systems and their Development'. This covers object-oriented design, concurrency and Java, and includes a large dose of UML, served with a soupçon of HCI. We are in the middle of the second presentation at the moment, and so I know a little bit more about UML than I did this time last year, and perhaps a little more than the students I am tutoring, though that's debatable. *Using UML* by Stevens and Pooley is a set text, and I have been looking again at what they have to say about 'use case' models, which seem slightly problematic, but also replete with potential, to someone with an HCI background approaching UML for the first time. Overall the book is an excellent introduction to UML, and I like in particular the authors' pragmatic approach, their non-prescriptive advice about how and when to apply UML, and the light of common sense they shine on some of UML's grey areas (and there are lots).

So what is a 'use case'? To quote from the book (start of Chapter 7), 'Use cases were first introduced in

the early 1990s, as a development of the earlier idea of *scenarios*.' It's that word again – and the italics are theirs, not mine. The authors continue, 'Scenarios still exist in UML ...'. Well that's good to know. A use case is then described as 'a kind of task which has to be done with support from the system under development'. Well, now we're talking HCI-speak – we all understand what a task is, don't we? But what kind of tasks are we talking about? Well, it turns out that the icons in a use case diagram really represent 'sets of things and possible interactions'. The 'Actors' in a use case model represent user roles (where 'user' can include other systems as well as a person). A scenario is an individual example of a use case, involving one specific user and one specific path through the task. To quote Stevens and Pooley again, 'A scenario is a possible interaction with the system and some people or systems/devices ...'. Elsewhere they also explain, '... a scenario is an instance of a use case, as an object is an instance of a class.'

So I leave you with *une petite histoire*:

The intrepid *IHM Stroke HCI*, after many years wandering in the wilderness, finally arrives, tired and exhausted, at the door of the UML mansion, and is welcomed by the *tres amigos*. They offer her rooms in the Use Case wing. She has brought some of her own furniture with her (including her trusty task analysis portable, affectionately known as UAN), but the UML mansion is flexible and expansible, so there is no problem fitting it all in. She immediately makes friends with some of her neighbours who moved there earlier, including STraN and his daughter Statechart, realising she knew them in the old days, though they have changed a little since she last saw them.

In the years following she has a long and eventful life in her

new home, even though her status is somewhat diminished, at least compared to what her progenitors had hoped for her, and she has some difficult times with the hard-nosed formalists in the correction wing. When old and grey and full of sleep, she takes down a book and reads, and realises with wonder that the great seer WB Yeats had anticipated and understood her inner longings, during the long tribulations in the arid UIMS desert, when he wrote his famous lines:

Far off, most secret and
inviolate Rose,
Enfold me in my hour of
hours.

She knew then for sure that she had found her true home.

Elsewhere in this issue Chris Rourke previews the HCI education panel at IHM/HCI 2001. Whether this fable delights or horrifies you, the panel will be an opportunity to tell your own version of the story, and weave a web of words to entrance us all.

Alistair Kilgour
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British HCI Group / European Usability Support Centres Usability Specialists' Accreditation Scheme (USAS)

The problem

Because of the widespread recognition that usability is critical in e-commerce and web design, the variety of professionals claiming expertise in user-centred design has got wider and wider. Some are well trained with considerable experience; others are frankly frauds. Those who know about usability and user-centred design wish to differentiate themselves from the frauds. Consultancies, individual consultants and individuals within companies need some well-recognised way to affirm their skills.

Usability specialists have always come from a variety of disciplines and backgrounds, and so the normal institutional routes to accreditation as practised by the British Computer Society or the Institute of Electrical Engineers are not appropriate. It is unreasonable to demand a particular university degree or to ask people to take examinations. What is required needs to be flexible, light-weight and multi-layered.

The solution

The British HCI Group is putting forward a set of criteria derived in a large EU project, INUSE (see page 12 for full list). Companies or individuals who feel they meet these criteria can apply for accreditation in one or more of 7 competencies.

The core competencies are:

- Usability consultancy
- Planning user centred design
- Evaluation and testing

The specialist competencies are:

- Requirements engineering
- Product design support
- Training courses
- Technology transfer

When accredited the company or individual can claim these competencies in communications with customers. The names of the company or individual with listed competencies and explanations of what this means will be displayed on the British HCI Group Consultancy web pages.

The whole scheme will be adjudicated by an independent assessor, such as Lloyd's Register who were a lead partner in developing the INUSE criteria. These criteria were used in the ratification of the members of the European Usability Support Centres.

How it will work

1. You read the criteria and register with USAS on the British HCI Group Consultancy web pages.
2. You will be sent application forms and the instructions needed to apply for the competencies you have specified. There will be a small handling fee for this step.
3. Should you decide to proceed you will then return the documentation required. All competencies require you to describe the work you can do for clients under each of the criteria listed for that competency. In addition, for some criteria you may be required to send in evidence that you have done this work in the past. There is a fee payable for the assessment of this material.
4. Some competencies require that you attend Lloyd's Register for an interview. There is an additional fee for this. For those competencies that do not require interviews, randomly chosen applicants will be subject to spot checks using telephone interviews. The British HCI Group will pay Lloyd's Register to carry out these spot checks.
5. Your accreditation is registered on the British HCI Group Consultancy web pages along with a pointer to your personal or company web pages. Business increases and you become rich and famous! There is an annual fee to remain registered on the site. Companies have to re-apply every three years.

How you can help us

We have the broad basis of the scheme but before we can set it up we need to know that it is attractive to our practitioner members. The questions listed opposite will help us settle the details of how it will work. There are only a few questions, please take the time to answer them for us.



Questionnaire

Q1. Which of the following core competencies would you want to be accredited with?

	now	in the future
Usability consultancy
Planning user centred design
Evaluation and testing

Q2. Which of the following specialist competencies would you want to be accredited with?

	now	in the future
Requirements engineering
Product design support
Training courses
Technology transfer

Q3. What additional competencies would you like to see listed?

.....
.....

Q4. What is your attitude towards attending an interview at Lloyd's Register in London? Let us say it was 30 minutes in duration and the procedure and goals were clearly specified in advance. (tick those that apply)

- I would not seek accreditation to any competency that requires an interview
- I would tend to avoid competencies that require an interview
- I think all the competencies should require interviews
- I would prefer another assessor than Lloyd's Register (please provide name(s))

Q5. What is the most you would be willing to pay for accreditation in a single competency? (circle one)
nothing / £50 / £100 / £200

Q6. What is the most you would be willing to pay as an annual fee to remain registered on the British HCI Group Consultancy web pages? (circle one)
nothing / £50 / £100 / £200

Q7. Comments? Can you suggest a better way of doing this?

Please feel free to copy and distribute this article and questionnaire to colleagues. It is available on the British HCI Group web pages along with the full set of criteria for all seven competencies.

Please return completed questionnaires to:

Andrew Monk,
Chair of the British HCI Group
Department of Psychology, University of York,
York, YO1 5DD, U.K.



British HCI Group / Lloyd's Register Usability Specialists' Accreditation Scheme (USAS)

Assessment Criteria from INUSE

This version by J Earchy, 2001-06-25

Classification: Public.

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Use of any knowledge, information or data contained in this document shall be at the user's sole risk. The members of the INUSE and UsabilityNET Consortia accept no liability or responsibility, in negligence or otherwise, for any loss, damage or expense whatever sustained by any person as a result of the use, in any manner or form, of any knowledge, information or data contained in this document, or due to any inaccuracy, omission or error therein contained.

The European Community shall not in any way be liable or responsible for the use of any such knowledge, information or data, or of the consequences thereof.

The reader is referred to the accompanying article for further information on the use of the criteria in the assessment of usability specialists.

Criteria

No	Criterion
1	Usability consultancy
1.1	Attract clients from its designated catchment area.
1.2	Assess a client's degree of expertise and familiarity with usability (usability maturity).
1.3	Analyse a client's organisational and work practices as well as the client's needs.
1.4	Suggest, instantiate, and make to operate within the consultancy framework required by the client the necessary practices, tools, and support as required by the client.
1.5	Obtain meaningful corrective feedback on its own technical and professional performance, which feedback is fed into the mode of operation of the consultancy in future.
2	Planning user centred design
2.1	Recommend how to fit UCD to the client's organisation and specific development work.
2.2	Show how user centred development work can resolve critical business issues.
2.3	Plan for the use of appropriate requirements engineering, product design support and evaluation and testing methods (HCD 2.1 – 2.6) at all stages of the development cycle.
HCD.2.2	Consult stakeholders. Establish structures, mechanisms and procedures to ensure that relevant stakeholders are effectively involved and consulted in each significant aspect of the system development and implementation.
HCD.2.3	Identify and plan user involvement. Decide on the most effective way to elicit user input at each stage of the project, taking best advantage of established good practice in team work and appropriate user involvement.
HCD.2.4	Select human-centred methods and techniques. Decide which methods will be included and how they will link together in the development process. Define how this will interface to the particular lifecycle methodology being used in the development of the system.
HCD.2.5	Ensure a human-centred approach within the project team. Establish a multi-disciplinary culture in the project team. Maintain staff focus on a human-centred approach. Identify the specialist skills required and plan how to provide them.
HCD.2.6	Plan human-centred design activities. Develop a plan specifying how the human-centred activities integrate into the overall system development process.
3	Evaluation and Testing
3.1	Formulate goals for the usability evaluation or testing.
3.2	Select tools and techniques which are appropriate for assessing the extent to which the goals have been achieved.



3.3	Define an appropriate context of evaluation which takes account of the context of use (activities HCD 3.1, 4.1 – 4.5 and 6.1).
HCD.3.1	Clarify and document system goals. Describe the objectives which the user or user organisation wants to achieve through use of the system.
HCD.4.1	Identify and document user' s tasks. Describe the tasks which users perform to achieve system goals.
HCD.4.2	Identify and document significant user attributes. Describe the relevant characteristics of the end-users of the system. This will include knowledge, language, physical capabilities, level of experience with job tasks and with relevant systems equipment, motivations in using the system, priorities, etc.
HCD.4.3	Identify and document organisational environment. Describe the relevant social and organisational milieu, management structure and organisational practices, etc.
HCD.4.4	Identify and document technical environment. Describe the relevant characteristics of any equipment to be used in the system or the context of use. Particular attention should be paid to the equipment with which the users will directly interact.
HCD.4.5	Identify and document physical environment. Describe the location, workplace equipment and ambient conditions and the implications for design. For example, lighting, noise levels, vibration, etc.
HCD.6.1	Specify and validate context of evaluation. Describe and check the conditions under which a system is tested or otherwise evaluated. Describe the relationship, and especially discrepancies, between the context of evaluation and the context of use.
3.4	Design and carry out evaluation and testing procedures, analyse and report the results, and produce diagnostics to improve the product.
HCD.6.3	Evaluate prototypes in order to improve the design. Collect user input on the quality in use of the developing system. Present the results to the design team(s) in the most appropriate format.
3.5	Assess whether goals have been achieved.
HCD.6.4	Evaluate the system in order to check that the stakeholder and organisational requirements have been met. Test the developing or final system to ensure that it meets the requirements of the users, the tasks and the environment, as defined in its specification. (see also HCD 3.5 and 3.6)
HCD.6.5	Evaluate the system in order to check that the required practice has been followed. Check systems for adherence to applicable human science knowledge, style guides, standards, guidelines, and legislation.
HCD.6.6	Evaluate the product in use in order to ensure that the product continues to meet organisational and user needs. Check the system in use for changes in organisational, user, other stakeholder, and usability needs and to ensure that it continues to meet these needs. (see also HCD 3.5 and 3.6)
4	Requirements engineering
4.1	Elicit the relevant context of use at the necessary level of detail as part of the requirements (HCD 3.1, 4.1 – 4.5).
HCD.3.1	Clarify and document system goals. Describe the objectives which the user or user organisation wants to achieve through use of the system.
HCD.4.1	Identify and document user' s tasks. Describe the activities which users perform to achieve system goals.
HCD.4.2	Identify and document significant user attributes. Describe the relevant characteristics of the end-users of the system. This will include knowledge, language, physical capabilities, level of experience with job tasks and with relevant systems equipment, motivations in using the system, priorities, etc.
HCD.4.3	Identify and document organisational environment. Describe the relevant social and organisational milieu, management structure and organisational practices, etc.
HCD.4.4	Identify and document technical environment. Describe the relevant characteristics of any equipment to be used in the system or the context of use. Particular attention should be paid to the equipment with which the users will directly interact.
HCD.4.5	Identify and document physical environment. Describe the location, workplace equipment and ambient conditions and the implications for design. For example, lighting, noise levels, vibration etc.
4.2	Elicit and verify the user-based requirements (HCD 3.3 – 3.5, 6.2).



HCD.3.3	Define the use of the system. Set and agree the required behaviour and performance of the system in terms of the total experience of the relevant stakeholders and/or the user organisation with the system. The total experience covers each aspect of a relevant stakeholder's relationship with the system and its context of use from its commissioning to its de-commissioning.
HCD.3.4	Generate the stakeholder and organisational requirements. Develop an explicit statement of the stakeholder and organisational requirements for the system.
HCD.3.5	Set quality in use objectives. Generate and agree measurable criteria for the required quality in use of the system.
4.3	State user-based requirements so they can be incorporated with system (technical) requirements.
5	Product design support
5.1	Generate a range of design options to support the users' tasks (HCD 5.2, 5.3).
HCD.5.2	Produce composite task model. Develop a feasible model of the user's new tasks from existing knowledge of best practice, the requirements, context of use, allocation of function and design constraints for the system.
HCD.5.3	Explore system design. Generate and analyse a range of design options for each aspect of the system related to its use and its effect on stakeholders.
5.2	Recommend the most suitable guidelines and style guides and national and international standards for the interface when required (HCD 5.4).
HCD.5.4	Use existing knowledge to develop design solutions. Apply relevant human science information to the design of the system. Include the stakeholder and organisational requirements, context of use, international standards, legislative requirements, existing patents, good practice, style guides and project standards, etc., in the design.
5.4	Assist the client in instantiating these standards, guidelines, and style guides.
5.5	Use the most appropriate methods for evaluating prototypes (HCD 5.6).
HCD.5.6	Develop prototypes. Make the design solution more concrete using simulations, models, mock-ups, etc. Develop simulation or trial implementation of key aspects of the system for the purposes of testing with users or user representatives
6	Training courses
6.1	Set out a syllabus of instruction appropriate to the expertise of the trainees in usability and user centred design.
6.2	Carry out a self-assessed training course following the syllabus.
6.3	Supply coursework documentation (notes, selected reading, bibliographies, URLs, etc.).
6.4	Refer to appropriate previous experience in the course topic(s).
6.5	Set up a practical exercise in the coursework topic (if relevant).
6.6	Use appropriate training materials.
7	Technology transfer
7.1	Assess a client's technology transfer and support needs.
7.2	Organise and run training courses.
7.3	Provide appropriate reference documentation, which is improved through feedback on its use.
7.4	Provide support and assistance at the client's premises ¹ , until the client demonstrates an acceptable level of skill.
7.5	Provide appropriate tools and methods to a client.
7.6	Provide remote support to a client as required during the transfer period ² .

1. This may be achieved in a number of ways including in- and out-placement of staff, visits, audits, etc.

2. This may be achieved in a number of ways including telephone or email helplines, mentoring, etc.

Taken from INUSE D5.2.3C, 1997. © LR/HFRG



'Oh what a tangled web we weave...'

Cassandra Hall

Yon bawdy biddy Cassandra lets the cat out of the bag about how rewarding an *Interfaces* column can be, all the while yearning for more to web-sites than -ility words. Civility and (fr)agility spring to mind, as she contemplates the imminent fresh-faced arrivals on campus. Guess they seem younger every year – even to the timeless.

April is the cruellest month. What a load of tosh. If T.S. Eliot had worked for real at education he'd know the cruellest month is October when all those wannabe graduates turn up in their Don't Know Nothing Yet T-shirts with the latest horrendous haircut and a stab at a sophisticated air. Cruel? The arrival of freshers is the epitome of cruel. But not so

cruel as friends deluged by unwanted email from the rapidly rising and falling e-publishing houses.

One such new web publishing HCI-ish journal circulated eminent and worthy members of the HCI community recently but one of them passed the details on to me, saying she liked a laugh. Evidently, they'll pay for 500 words of clever musings on HCI issues and cited usability and accessibility as things they were interested in. She asked me how much *Interfaces* paid me and when I said I did it for free she said that figured. She suggested I write for these people and it'd soon teach them to circulate just anyone.

This set me thinking. Have you noticed how everything to do with HCI issues nowadays has an ility on the end? I'm actually considering the setting up of a Iility Soon! Group to counteract the Norman Nielsen circus which is beginning to make me reach for the OED every time an Alert Box notification rattles into my inbox.

I don't know. Maybe I'm getting cranky but it seems to me sometimes that people act as if talking about things is the same as doing them. I'm getting just a touch impatient with all this talk and very little signs of any real change. Systems are still difficult to use. Real people still have problems with them. Software houses put loads of words out saying that their products are have usability, accessibility, learnability but all they really have is earnability for them. Accessibility seems to mean that if you try hard enough you may finally crack how to do whatever it is you want to do or give up in the process. Learnability, that's a good one. All products are finally learnable by someone but no one mentions the time and effort you need to put into it or the fact that being a software engineer of 2 zillion years' experience would help a bit.

And usability. Dear old usability. What does it really mean? Whole books get written. Whole courses get taught. But is anyone actually doing it? I was talking to some undergrads recently at a university where they study usability engineering and one asked me if you had to build software to be a usability engineer. He was surprised when I said most emphatically that usability without an end product in sight was a bit of a waste of time and I object to people treating 'engineering' as meaning all sorts of things that don't involve an actual physical product. Usability engineering without an end product is like sex without orgasm; all very well but something you hope happens to the other guy.

But all those words, all that ink, all those hours of alert boxes and web bites by Tog and still the majority of web pages look like a drawing by a 5-year-old and have all the sense of a Rorschach ink blot test. Navigating your way through a web page makes unravelling a ball of knitting yarn seem interesting and it's the only thing harder than quantum mechanics I know of.

My students ask me: Will it get better? Not when will it get better but will it ever do so. That's a tricky one. Some of the problems are down to technology. The problems over delivery of pages, for example, will go away when technology reaches the point when it can deliver pages instantaneously. Some of the problems of navigation are undoubtedly caused by having to wait for the pages. As the seconds, minutes and hours tick by so does the knowledge of what you were doing, your concept of task, trickle away too. We have an expectation of how long tasks should take and our ability to concentrate on them is bound up with that expectation. For some tasks, as time passes keeping the concept in your head of what has been done and what has to be done is very difficult. Judith Ramsay et al. did some nice work a few years ago about people's perceptions of pages and they found that swiftly delivered pages were adjudged more interesting. The poor sausages weren't taking up important bandwidth trying to remember what they were about and of course they felt more interested. So, the technological fix will undoubtedly work there.

But other navigational problems are to do with design. Indeed, many of the difficulties of working from the Web are to do with design. Web design reminds me of those drawings done by elephants and young children when the fact there are lots of colours to choose from is so beguiling that they use all of them. Or they get so fascinated with putting the paint on the page, they produce a monotone.

As each new web development tool springs on to the market so more capabilities are given to ordinary people without formal training in web design. Now, it's quite possible to learn how to design without subjecting yourself to formal training/education. Some people seem to have a natural talent. I have no doubt that Leonardo would have delivered web pages that even Nielsen would be hard put to criticise. But for most of us, designing things that other people will find attractive and usable just doesn't come easy.

But does writing about it make any difference? Only if it's read and understood in the context of how it will be applied. And there's the rub. Many web page designers are designing for themselves and it doesn't dawn on them that they're different from other people and that reading about web design might help them. One of my (part time) students who works for a web page design company said that they'd never thought of looking at the experience of the user. Yes, they'd got people to try out their designs and approve them but they'd never gone to an ordinary user in their own environment and seen what happened when they used the design. As a result they'd designed wonderful pages using a zillion graphics that on their own super fast machines with high resolution screens looked wonderful but when ordinary users



Educating tomorrow's HCI

a practitioner's view

... continued from page 15

tried them at home on their ancient ZX81s and a tele (ok I exaggerate a bit) the effect wasn't quite so lovely.

At the moment our ideas outreach our capabilities. At the moment our ideas do not conform to the needs of users. At the moment we do not have a useful definition of what web page design is really all about. The skills that are required just now are incredibly diverse. However, as the tools become simplified so the people who will finally carry out the activities of web page building will gradually change. At the moment we rely very heavily on software engineers and many of those are brilliant engineers but rotten designers. I guess that technology has been the same in the past. I'm pretty certain that writing stuff on the pyramids was a skilled job. I bet the ordinary person couldn't just grab a reed pen and a papyrus and make a good job of it. In fact, one college is making its students do just that in an effort to have them understand the production of the scriptures. And the Ellesmere manuscript was done by a skilled technician. Chaucer composed and then passed the task of transcribing on to the next guy, his scribe – Adam. But the scribes would more often than not have been terrible poets and I bet Chaucer's handwriting was awful.

We're at this kind of stage now in web page building. As the technology matures so anyone will be able to use it because it will emerge as a skill that is basic. Just like everyone should have the opportunity to learn to read and write. When this happens the designers of web pages will be able to concentrate on just that. The rest of us can dabble and play for sure, just as we can dabble and play with writing and reading and we aren't all Diana Rigg or Anthony Hopkins or Walter Scott or Geoffrey Chaucer. Until then I guess people will continue to try to tell us what to do but my guess is they will have minimal impact and the Web will continue to be a dolly mixture of electronic documents without structure, form and functionality.

now's your chance...

There are three opportunities to become a commissioning editor for *Interfaces*

- *The Bluffer's Guide* (a chance to summarise the obscure in down-to-earth language)
- *My PhD* (a description of PhD research that the student's parents and friends would understand)
- *Profile* (HCI 'celebrities' answer 20 or so questions)

It could be you – contact editor
Tom McEwan, T.McEwan@napier.ac.uk

At the forthcoming IHM-HCI 2001 conference *Interaction without Frontiers* (Lille, France, 10-14 September, <http://www.ihm-hci2001.org.uk>) a panel of HCI educationalists will lead what is sure to be a lively debate on the present status and future development of HCI education in Europe and beyond. This will be an interactive, participative session where topics will range from the different approaches to HCI education and practice in France, Britain and elsewhere in Europe, to the best means for preparing HCI professionals to meet the burgeoning needs of industry and e-commerce.

To set the background, it may be useful to summarise the views of the panellists from their position papers. (The full text is published in Volume 2 of the conference proceedings.)

Stephane Chatty (CENA Toulouse) – In Stephane's experience the French education system tends to involve highly specialised training and careers. Therefore through broadening the core discipline, HCI courses have benefited the computer science profession, but there are still ways its influence could be increased. Designing products and implementing them are different activities, and specific curricula should be developed for the job of managing product design. Programmers need more training in psychophysics and handling the requirements of graphic designers, and less use of the purely cognitive notions.

Peter Gregor (University of Dundee) – Peter reports that a recent review of UK degree programmes which focus on HCI showed that there are 11 different names in common use, and that most courses lie within Cognition and Psychology, Design, or Computer Science departments. It may therefore appear as if HCI educators are doomed to fighting battles on the fringes of psychology or engineering departments, but Peter argues that this need not be the case. HCI should be an integral part of degrees in computing, rather than an ill-fitting module tagged on late in the curriculum. Industry has signalled that it needs software developers who know about HCI. To meet this need, the University of Dundee has created a coherent computing degree that assumes usability engineering processes as a background on all projects. The aim is to provide graduates who have a culture of developing software with and from a user-centred perspective.

Lars Oerstreicher (University of Uppsala) – Lars observes that HCI is on the verge of a major change in emphasis, evolving into the wider field of Human-Machine Interaction (HMI). This is driven by the integration of computers into machines and devices. As embedded systems combining computers with technical artefacts play an ever greater role in society, a different type of education is required. Education in the area of HMI will need to be more holistic and relate more to real situations, concentrating less on the computer as a standalone device.

Tom McEwan (Napier University, Edinburgh) – Tom argues that, for greater commercial acceptance of HCI, a simpler approach is needed, avoiding opaque and arcane language which alienates other stakeholders. A simpler interface to the usability profession itself is needed. Large companies clearly require more usability specialists, who are often placed in small specialist teams developing internal standards. These



professionals:

Chris Rourke, User Vision

same companies measure ability not by the value of a person's ideas, but by their ability to persuade others that the ideas are valid. The UK academic tradition emphasises education, not training, yet a purely academic approach succeeds only in marginalising usability specialists. Therefore Napier aims to reinforce lifelong learning, often through part-time or evening classes. Graduates can leverage their real world experience which, combined with their HCI knowledge, provides a better basis for integration into commercial projects.

Philippe Palanque (University of Toulouse) – Philippe acknowledges that the area of HCI is relatively less developed in France than in other countries such as the USA and UK. This is reflected by the fact that there is very little recognition of HCI as a discipline in the French academic environment. Although computer science is the most accepted field within which to teach HCI, computer science students receive only a superficial presentation of HCI. Partly because it is not recognised as a separate discipline with its own diploma, HCI is still not considered as a profile for recruiting professionals in industry. Philippe therefore argues for better recognition of the field of HCI in academia, as an important step in raising the profile of the profession in French industry.

My own view: planting the seeds of a stronger usability profession. As a usability consultant rather than an academic, my own views on the subject of HCI education are based primarily on my experience providing training courses to commercial clients. Providing training courses, especially for web usability, has been an increasingly popular service of my company, and I provide in-house and public courses of varying durations. These are attended not by students, but by full time employees of financial institutions, web design firms and other corporations.

In teaching courses in HCI, I may not be educating tomorrow's HCI professionals (unless they feel so inspired that they subsequently sign up to an academic programme), but I am educating the HCI advocates and implementers, which is no less important. After the class the participants perform the important role of informing their managers of the cost benefits of usability, illustrated with some examples (perhaps from the course), and possibly offering to coordinate a drive to increase awareness and application of user-centred design within the organisation. They have motivation and a degree of knowledge from the training, and often evangelise to their workmates about the benefits of the user centred approach. I have seen people who adopt usability as a result of their training, leading an internal crusade and seeking opportunities to drop in impressive sounding new parlance such as 'information architecture', 'heuristic evaluation' and 'contextual task analysis'.

Hopefully many people go beyond paying lip service, and lead the effort to integrate usability within their software, product or web site design. It is important that they score some significant early 'quick wins', for example identifying usability bloopers that the design team built in through over-familiarity with the product. If the project is of a significant

scale, they often realise the limits of their own knowledge and search for external professional help. Commercial training helps to plant the seed, leading to greater awareness of the profession. This in turn leads to more involvement of HCI professionals, whether as a short term contract for a consulting firm, or a full time job by the graduates of one of the academic programmes.

In Europe there seems to be a correlation between latitude and the prevalence of HCI in industry and academia. Whether it is through economics or tradition, the fields of HCI and human factors seem better represented in the corporations and universities of northern Europe than the Mediterranean countries, although exceptions do exist. Having spent a year in Spain performing usability consultancy, I found that outside the corporation where I worked the awareness of usability and opportunities for employment in the field were lower than the UK or US.

More commercial training will help address this, and complement the existing academic programmes in southern Europe. Some companies may consider that a full time HCI professional is not needed, yet they will want to gain the well-publicised benefits of user-centred systems. More commercial HCI training will help to bring about a synthesis between the participants' knowledge of their commercial domain and practical knowledge of usability which, in the long run, will help create greater recognition and demand for HCI professionals.

It is clear that from the views expressed above that there are many challenges and opportunities for HCI education throughout Europe. If you are attending the IHM/HCI 2001 conference in Lille and have an interest in HCI education, please come and join the debate, starting at 9.00am on Friday 14th September.

Chris Rourke is the Director of User Vision, a usability consultancy based in Edinburgh. He runs courses for designers, programmers and marketing people on designing usable web sites, and has provided consultancy, usability testing and training for clients including Intelligent Finance, Dell, Royal Bank of Scotland, and Scottish Widows. Originally from Boston, Chris has worked in Barcelona, London, and Edinburgh, and has wide experience of how usability is viewed and applied in North America, UK and other parts of Europe. (See <http://www.uservision.co.uk/> for more information.)



Sino-Scot link

http://www.btinternet.com/~j.doyle/Sino-Scot/Front_Page.htm

Liza Hurley

Sino-Scot Link web-site is the outcome of a research project carried out by a group of Chinese and European MSc students at Napier University. The aim of the project was to create a bilingual web site that would be of use to prospective, current and past Chinese students studying at Napier University. The reasons for choosing this subject were the group's interest and experience in both HCI issues and Chinese culture.

The group felt that a 'user led' approach was the best way for this project to develop. An initial feasibility study involved surveys with Chinese students across the major Napier University campuses. This was to confirm that the group's initial idea for the project was sound, and it set the direction for the research topics and site content. The next stage of user participation was an evaluation carried out on two initial prototypes constructed. The prototypes concentrated on interface design and HCI issues, and had little actual information content. Taking cognisance of the preferred features of the two sites, a hybrid site was created and further developed.

In the final usability study participants were asked to rate various aspects of the prototype site, which now included researched content. The feedback analysis revealed that survey participants are satisfied with the majority of the features available, particularly the usefulness of the site content and the bilingual aspects. Areas highlighted for improvement relate to the interactivity level on the site, along with enhanced multimedia content.

The cultural aspects alone, throughout the user evaluations, threw up a lot of interesting and unexpected results. What is acceptable and pleasing to western web site users, in terms of site layout, appearance, interactivity, content and so on, can be undesirable and inappropriate to other cultures. During the literature search, it became evident that most efforts, by researchers and HCI experts to date, have had to focus on the enormous challenges in coping with Chinese characters, and the complexity of the languages and dialects. As a result, many cultural issues have not received the attention deserved, at least up to this point in time.

Chinese is spoken with seven major and more than fifty minor dialects. (Dialects differ as much as two distinct European languages). Mandarin was established as the official dialect in People's Republic of China in 1956, but this is not a general solution from an HCI standpoint. In Hong Kong and Singapore, the Cantonese dialect is prominent. With over five thousand characters used across the various dialects, representing these on a keyboard becomes totally impractical. A number of solutions have been developed as an alternative. These devices focus on handwriting, speech recognition, speech synthesis and language modelling.

Previous research shows that speech input is generally preferred by the Chinese for its speed. However it does not suffice as a stand-alone solution due to the complexity of the spoken language, along with the spoken form of a character sometimes being ambiguous. To overcome this, interactive devices using both speech and pen must be supported in future developments.

Jacob Nielsen, of the Nielsen Norman Group, in reference to Asian translated sites states 'we always find great usability

issues difficulties when overseas users have to use the sites. It's several things: the language, the culture and the translation have been done poorly'. In importing the design for use in foreign markets, where the translation is done well, often the navigation may not translate. Choong (1998), investigating Chinese and western use of icons, concluded that it is more beneficial to provide icons with textual elements for American users and icons with figural elements for Chinese users. It is imperative that GUIs are designed to ensure quick and accurate recognition by users, resulting in better usability of the interface. This becomes a more critical HCI issue when creating a bilingual site.

During the group's own surveys and interviews, it became apparent that there is little awareness in western culture of the difficulties that other cultures face in using supposedly 'global', but western-designed, creative and technical tools in electronic communication. This necessitates many more aspects to be considered in bilingual site development than is perhaps realised, over and above those considered in more routine site construction. These include the language character recognition, font displays, language translation, input methods, knowledge of different culture user group computing facilities, and software installation language difficulties experienced by non-English speakers.

There is room for further research into the areas of bilingual and multi-culture web-sites. As already noted, the researchers struggled to find literature on HCI issues relating to the Chinese culture, as other areas (e.g. spoken and written language challenges) have consumed all efforts. By having access to Chinese students the group was able to establish design preferences specific to that culture. This re-emphasises the necessity of user involvement throughout any web site design, but especially with the added dimensions of multi-culture and bilingual aspects.

The Internet is becoming an equally accessible tool globally but we must recognise and appreciate the cultural differences of all nations if it is to be truly a world-wide communication and information medium. Today's technology drivers must cater for language variances and local preferences in their design and development of electronic telecommunication devices and software.

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Adapted by Liza Hurley, a student on the MSc Interactive Technologies for e-Commerce programme from a report prepared by Liu Chaohua, Jim Doyle, Liza Hurley Yao Shengchun, Jean Wang under the supervision of Tom McEwan.



A beginner's perspective

Andreas Kakoulli

All too often we can forget in these pages that HCI concepts need to be accessible to the mainstream. One of the toughest frontiers to overcome is between those in the field and those outside it. For this reason it is important to appreciate how our received wisdom is received, never mind the more esoteric aspects of our discipline! I am grateful to Andreas for being brave enough to share his first glimpses of HCI with us.

As a student studying for a degree in Computer Science I was intrigued when I found out one of my compulsory modules was 'Human Computer Interaction, Users Tasks and Design'. My first impression was that this might be a module with only marginal relevance to my interests. It would not help me in the application of 'real-world computing'. Needless to say this was not the case. HCI is something that should be studied by anyone with an interest in software development, be it website design

using HTML, or program design using other development tools. My first impression was that it is a subject based on easy-to-understand principles, and, in my case, it was taught in plain English with no new technical considerations to grasp. Instead it builds upon the knowledge that you may already have. I see HCI as a study of the ways to solve usability issues. The framework that it provides can help define clearly a structured way of designing things. I think that as multimedia systems and web-based business applications continue to develop, there will be a demand to provide very user friendly software. We need to keep people interested in a product whether it is a word processing package or a shopping web site. My interest in HCI became relevant in designing my own web site. I try to use HCI methods to make sure that I provide a consistent and clear

design. I started to design a site without producing such a plan and soon realised that designing it as I go along would stop me from having a 'well-designed' website. By taking into account research into cognitive psychology and how it applies to HCI, including notions of cognitive models and their use in evaluating, and predicting, system use, I gained a greater insight as to what HCI actually meant. It made me interested to find out more, because, even if one disagrees with some theories, by developing my understanding I built up a knowledge-base that helps me in my web page design. During my studies of HCI I took an interest in User Centered Design methods. This subject matter deals with a discussion of the needs for user-based methods in design of interactive computer systems. As technology continues to move on, and ever increasingly becomes a part of our lives, (for example the increased HCI requirements of 3rd generation mobile phones) it is all the more vital to capture requirements early on in the design stage. This signifies the importance of usability requirements in system design. Depending upon the system in question, it can be assumed that the end users are humans. If you can develop an understanding of how we act and react to things you can then introduce these positive aspects into the development of useable systems, whether it be the software contained in mobile phones or the word-processing package that you use at home. HCI is a subject too often overlooked and should be continually promoted (which is of course the idea of the British HCI Group!). Such promotion can only be good and is needed to increase its popularity amongst students.

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artefact + marketing = product

Alan Dix

Business is quite simple: you make something, you sell it – right?



Those involved in product design and software usability know that it is not as easy as that. You don't just make something, you need to understand who is going to use your product, what their needs are, etc., in order to design the right product for the right people.



This looks like a one-way process, but of course, in a commercial world, deciding who you are going to address and which needs you address will be largely by determined by who will pay money. So marketing certainly seeds design.



In fact, things are far more closely tied than that. First of all the features that sell a product are not necessarily those that are really useful.

I have three use-words for design.

We need to design products so that they are:

- **useful**
do what the users need - functionality
- **usable**
users can do these things easily and effectively
- **used**
users actually do start and continue to use it

The last of these includes acceptance within an organisation, aesthetics of the design so that people want to use it, and marketing it so that users can see it is there and buy it.

If a product is not used then it is useless however useful or usable it is!

Standard usability typically stops after the first two!

There are exceptions to this. Participatory design is ostensibly about making a better design because end-users are involved. However, the process also makes sure that the future users are committed to the final system and are far

more likely to use it whether or not it is better at meeting their real needs. That is, participatory design is a form of marketing!

It is often said that software products have too many features that no-one ever uses. However, customers (who will become users) are likely to be attracted by long lists of new features. If you want the 20% of features that really are useful to be actually used, you may need to add the other 80% of irrelevant features that mean that customers buy it!

So the need to market a product changes what may go into a product.

However, the interplay goes deeper still.

If you market a car as powerful and sexy this will influence who buys it, but almost certainly the person who buys it will drive it faster and more recklessly than the same vehicle marketed as a family car. Our use of a product depends on our perception of the product.

At a deep level you could say that the *artefact* we have designed only becomes a *product* once it takes on a set of values and purposes within the user's mind – and these are shaped intimately not just by the design, but also by the way we market the product.



In usability we know that a product is more than a raw technical artefact it also consists of the documentation and training that goes into what some call the wetware of a system (the humans!). The first a user sees of a new product is when it is advertised and sold to them. We are missing a crucial element if we ignore the effects of the way the artefact is marketed to its future users.

Nowhere is this more apparent than in Internet products and services. The users are fickle and critical, products are virtual with uncertain boundaries, and documentation, if provided, is unlikely to be used. How we present a product on a website, in PR, in advertising, will intimately determine the use of the product.

Think about web-based email. Your personal mail is received by a multinational corporation, siphoned into their internal data stores and dribbled out to you when you visit their site. Would you do that with your physical mail? However, this is not how we perceive it. Users have sufficient trust in the organisations concerned that they regard the web mailbox as 'mine' – a small section of a distant disk is forever home.

The factors that build this trust are complex and intertwined, but certainly include the interface style, the brand and reputation of the provider, the wording used on the site, the way the service is advertised to you, newspaper and magazine articles. In the UK a few years ago the



chairman of Ratners, a large UK jewellery chain said, in an off-the-cuff remark, that their products were cheap because they were 'total crap'. The store's sales plummeted and the share price plunged as public perception changed. Imagine what would happen if a senior executive of Microsoft described Hotmail in the terms at the beginning of the previous paragraph!

As we address the needs of a networked society, we must go beyond the creation of useful usable artefacts, and instead design products that will be used. To do this we cannot rely solely on cosy relationships between users and designers, but open up the design remit to consider every stage of product deployment from the first advert the user sees until the consumed product hits the bin, is deleted from the hard disk or the URL is cleared from the favourites list.

Since writing this article I've seen some of the other contributions for this issue. Tom McEwan suggested that I might be able to write in a bit about breaking frontiers to fit in with the IHM-HCI theme. He is of course dead right, we so easily draw little frontiers and call it HCI: around the screen, the task, even the organisation. I'm arguing here that the frontiers should certainly intersect those of marketing (and even PR). It's good to see similar sentiments echoed in Dixon's interview with Norman, and indeed Norman's 'right functions' and 'be enjoyable' are close to my useful and used. However, it's not just that the way we talk about a product that influences whether it will be used, but more fundamentally how it is used throughout its life. In more traditional HCI-speak, the user's models and metaphors are formed not just by the product but by how it is sold to them. As long as users read adverts, hear news stories and talk to salesmen, these are part of the human-system interaction.

Alan Dix is director of two internet companies, vfridge and aQtive and a professor at Lancaster University

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Book Review

Kristine Faulkner

Web Site Usability Handbook
Mark Pearrow
Charles River Media, 2000
pp350, £36.99

This is a lively book written by someone who is keen not to bore the world, has read stuff other than computing books and has a sense of humour. It is clear, nicely set out and has a smattering of illustrations, cartoons, and bits and bobs to help the reader along. There's a very useful appendix and a CD. Pearrow writes in a readable and no-nonsense style that I think will appeal to students, though may irritate some academics. I found his approach charming and reader-friendly. However, his lack of referencing is a problem especially if staff want to recommend this book to students. What's even more irritating is that he does refer to some of the texts in the bibliography. It seems a shame that he has passed by the opportunity to show students how good referencing is actually done. Maybe the rest of you won't be irritated by this but I find getting students to reference properly is a real nightmare and I'm getting increasingly cranky about authors who don't do it, especially when otherwise the book is very useful. However, to be fair, there is a bibliography of books students can get hold of and some they may even read. Pearrow does seem to have covered a reasonable span of seminal texts (Norman, Miller, Anderson) and recent pot boilers (eg my own Intro to HCI). It's not easy to write a book like this and Pearrow seems to have got it about right.

I like his way of dealing with the history and the jargon of the Web. He takes nothing for granted and explains it all in a clear and kindly fashion. I wouldn't be embarrassed to ask him what www means (he explains it anyway). Much of the time one has the feeling that he is really talking to you individually, it is a very conversational book. Along the way he managed to touch on ethics, how to talk to users, testing, colour blindness, how to conduct interviews and all sorts.

I like this book. It is an introductory text so useful for undergrads wanting to get a feel for the area, very quickly. It might be useful as distraction and going over familiar ground for those about to take examinations. Academics may well find the style too informal but for many students it will be pitched at a level they can understand and students may well enjoy the fact that Pearrow quite obviously has commercial experience. Indeed perhaps he is aiming at a commercial market and that would explain the lack of referencing. Nielsen (much to my chagrin) does the same thing. I guess that the world doesn't revolve around academia but that doesn't stop me from hankering over decent referencing. However, as an introductory text for undergrads it's ideal, if a little pricey at £36.99 (though there is the CD). This is a book that covers a lot of the ground that anyone would want to cover in a Web usability course

Don't forget to tell them that the lack of referencing may be fine for Pearrow who is established and writing for a commercial audience but it isn't okay for them to... so, another case of "do as you say" and not as he does.

Kristine Faulkner
kristine@sbu.ac.uk



ASSETS 2002 is a conference about computer-based systems designed to address the special needs of people with disabilities. The conference's scope spans special needs associated with speech, motor, hearing, and vision impairments; cognitive limitations; and emotional and learning disabilities.

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